

LL-2006-LLNL-05

April 4, 2006

Record Rains Create Hazards for Bike Riders

Bicycles injuries at LLNL have increased during the rainy season. In separate accidents during a rainy week in February 2006, two cyclists lost control of their personal bicycles and fell on Greenville Road near the Laboratory. Both accidents were caused when the bike tires slipped on the white stripe at the road's edge (the "fog line") that was slippery from the rain. Alameda County subsequently confirmed for LLNL that the correct abrasive paint had been used for the Greenville Road fog line. Abrasive paint is also used for road markings at LLNL.

From January 1, 2005, through March 30, 2006, twenty LLNL workers reported bicycle-related injuries. These accidents constitute 2.3% of LLNL's OSHA recordable injuries during this time period, and many of the accidents could have been prevented. *Some* of the bicycle incidents that occurred at LLNL are summarized below.

March 13, 2006, while riding a personal bicycle, an LLNL worker was involved in a collision with an LLNL electric cart.

March 1, 2006, a bicyclist, carrying a bundle of papers in one hand and steering a Lab bike with the other hand, lost control of the bike and fell while swerving to avoid a puddle.

October 24, 2005, a worker fell off a bicycle because they were unfamiliar with the configuration of the new Lab bikes.

September 1, 2005, an LLNL worker riding a bike to the parking lot around 5:00 pm encountered a locked gate (which was usually unlocked). The worker attempted to stop, lost control of the bike and fell.

August 12, 2005, and **November 16, 2005**, two bicyclists fell off Lab bicycles when they lost their balance due to bike seats that were positioned too high.

July 21, 2005, a bicyclist fell during his in-bound commute when the bike's front wheel slipped on the metal guard gate track at the entrance to a "Q" area.

January 31, 2005, the front wheel of a Lab bike went into the soft dirt off to the side of the bike path, and the bicyclist fell sideways.

January 12, 2005, a bicyclist fell when the foot slipped off the pedal. The cyclist was riding a Lab bike while standing because the seat was wet from rain.

Analysis

Some of the causes of onsite bicycle accidents in recent months were

- Bicycling on unpaved pathways, uneven surfaces, and slippery surfaces.
- Inattention to changes in surroundings while operating bicycles.
- Employees unfamiliar with the new Lab bikes, which are configured somewhat differently than the older models.
- The bike seat positioned too high for the rider. Workers did not lower their bike seat to allow the bike to fit properly.

Recommended Actions for LLNL Employees

1. Always evaluate a bicycle's condition before use. If a bicycle's components are observed to be broken or malfunctioning, do not use the bike. If it is safe to do so, place a broken bicycle upside down so that Bicycle Maintenance Shop personnel can collect the bike for repair.
2. Use the quick release located on the shaft supporting the seat to adjust the seat of a Lab bike to the proper height *before* riding the bicycle. The seat should be adjusted so the rider's feet can comfortably reach the pedals with knees slightly bent.
3. Use both hands to steer the bicycle. Carry material in the bike basket or a backpack so that you can steer with both hands.
4. Pay attention to your surroundings while riding a bike. Keep alert for vehicle movement, other bikes, pedestrians, and road conditions. Look ahead, look around, and ride defensively.
5. Report unsafe pathways to Plant Engineering's Customer Service (2-9444) so they can make the necessary repairs.
6. Use caution when bicycling across slick surfaces, such as metal tracks, metal covers or construction plates, and areas with accumulated debris. Even normally abrasive, non-slip surfaces such as road markings, painted curbs, and asphalt can become slippery when wet.

Where to Get Help and More Information

Document 21.3, "Vehicle Operations and Traffic," in the *ES&H Manual*, Section 3.8, "Bike Safety."
http://www.llnl.gov/es_and_h/hsm/doc_21.03/doc21-03.html - 3.9

LLNL Lessons Learned

- "Rider Suffers Serious Injuries When Thrown from Bicycle," March 3, 2004.
http://www-r.llnl.gov/es_and_h/lessons/04_3_bike_safety.html
- "Safe Riding Includes Bicycle Maintenance," July 2, 2001.
http://www.llnl.gov/es_and_h/lessons/IE_Bike_maintenance.htm
- "Bicycle Care," January 29, 2001.
http://www.llnl.gov/es_and_h/lessons/IE_bicycle_care.html
- "Using Bicycles Safely," July 28, 1998.
http://www-r.llnl.gov/es_and_h/lessons/using_bicycles.html
- "Vehicle Accidents Involving Bicycles and Pedestrians," April 12, 1996.
http://www-r.llnl.gov/es_and_h/lessons/vehicle_bicycle.html
- "Bicycle Accidents on the Increase," December 28, 1994.
http://www-r.llnl.gov/es_and_h/lessons/bicycle.html

To review other LLNL Lessons Learned, go to

http://www-r.llnl.gov/es_and_h/lessons/lessons.shtml

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